

Forest Derived Biomass Supply Eligibility under

SECTION 1. Section 399.20 of the Public Utilities Code

Background

At the request of the Energy Division staff at the California Public Utilities Commission (CPUC), the Department of Forestry and Fire Protection (CAL FIRE), with the assistance and facilitation of Sierra Nevada Conservancy and a variety of other stakeholders, this whitepaper was prepared to assist in determining fuel sourcing bioenergy production eligibility criteria for “byproducts of sustainable forest management” consistent with the term as used in Public Utilities Code Section 399.20 (f)(2)(A)(iii). The intent of this whitepaper is to: 1) propose a definition of “sustainable forest management” and 2) provide recommendations for a process for certification, verification, and monitoring to be utilized by sellers and purchasers of eligible by-products to verify that biomass feedstocks utilized by a particular facility are supplied in a manner consistent with the statutory provision for sustainable forest management Section 399.20.

Since submission of the whitepaper in late 2013, staff from CAL FIRE and Board of Forestry and Fire Protection (BOF) identified the need for some changes in the original document. Changes have been made to ensure that the objectives of SB 1122 are achieved, while recognizing the current adequacy of regulations governing commercial timber operations under the Z’berg-Nejedly Forest Practice Act and BOF forest practice regulations.

Issue 1-Recommendations for Defining of “Byproducts of Sustainable Forest Management”

SB 1122 directs 50Mw of bioenergy using byproducts of sustainable forest management allocated based on the proportion of bioenergy derived from Fire Threat Treatment Areas as designated by the Department of Forestry and Fire Protection. The current Fire Threat Treatment Area designation by the Department was completed in 2005 and reflects an index of expected fire frequency and fire behavior based upon fuel ranking and anticipated fire frequency (Sethi, et.al, 2005). Estimates of bioenergy which are to be used for allocation purposes from Fire Threat Treatment Areas were made based on datasets which reflected inventories and vegetation structure on forested lands and shrublands.

The categories of potential bioenergy sourcing were adapted from the Public Interest Energy Resources publication titled “An assessment of biomass resources in California” published in 2004. Categories included in the assessment for development of biomass and bioenergy estimates included 1) logging slash, 2) forest thinning, 3) mill wastes, and 4) shrub. These categorizations are sufficient to support an allocation of the 50Mw to the investor owned utilities (IOUs).

However, given the assumptions utilized to develop the overall estimates and the scale at which the bioenergy estimates were developed, the Department concurs with the Black and Veatch draft consultant report (April, 2013) that the resource potential and data assumptions for forest materials that would be considered sustainable at the project level needs to be refined for the purposes of determining whether a particular project which supplies by-products, meets the sustainable forest management criteria.

The process for determining sustainable forest management byproduct eligibility under the provisions of SB 1122 relies on the definition of sustainable forestry in part 2 of the Society of American Foresters definition (Appendix A) as well as the federal level defined in FS-979 (Appendix B) and a series of public workshops which were held to refine these broad definitions for the purposes of determining byproduct eligibility under SB 1122. To meet eligibility requirements all biomass feedstocks that are used within this program must be derived from projects that are conducted in conformance with local, state, and federal policy, statutes and regulation, including CEQA and the National Environmental Policy Act (NEPA). This whitepaper, however, does not support requiring CEQA or NEPA review on projects that would not have otherwise been required to be reviewed under those laws.

The workshop process was planned and facilitated to assist in refining and integrating the key elements of the two definitions of forest sustainability applicable to the determination of feedstock eligibility for purposes of compliance with PUC Section 399.20. This five month process included stakeholders from the environmental, community, governmental and private industry sectors. Numerous background materials were prepared and circulated, three workshops were held to facilitate input and build consensus and multiple drafts of this white paper were circulated for comment. This paper reflects a balance of viewpoints and attempts to ensure that the majority of biomass feedstock is derived from sustainable forest management practices while providing the biomass energy operators enough flexibility to be able to use diverse sources to ensure year-round reliability.

Environmental stakeholders expressed concerns focused on the potential for markets for biomass materials to lead to utilization of components of existing vegetation types which have not been traditionally utilized at a pace and scale that would not be sustainable over time. This concern also mirrors concerns raised in literature review including a comprehensive literature review done by Stewart et. al. (July, 2011).

Paraphrasing Stewart, et. al. the structural stand components most likely to be harvested or manipulated during woody biomass operations include:

1. Dead or downed wood (pre-existing) and harvest generated slash,
2. Understory shrub, herbaceous plants and non-merchantable trees,
3. Wildlife structural trees (decaying live trees, cavity trees, mast producing trees, etc.)

Stewart further notes:

"The maintenance recruitment of structural elements such as large tree and snags, logs, and coarse woody debris that would otherwise not be replaced under an intensive biomass harvesting regime is an issue of critical concern for biodiversity and food webs related to these elements."

There was general concurrence from the workshop participants regarding these key areas and recognition that approaches to evaluating the potential impacts of a proposed forest management vary somewhat between federal, private, and state ownerships both in terms of environmental permitting requirements, review, approval, implementation, inspections, enforcement, etc. Furthermore, the literature reviewed as part of this process did not make specific recommendations on prescriptive retention standards.

There was also general concurrence that there be some certainty for supply of by-products and that the process for verifying that by-products were eligible be kept as simple and straightforward as possible.

Existing California Sustainable Forest Management Regulatory and Management Framework for Non-federal and Federal lands.

Forest management activities on federal, state and private ownerships in California, that could provide biomass to 3Mw or less electric generation facilities as defined in Section 399.20(b), are subject to numerous statutes and regulation.

Existing Regulatory Framework for Non-federal Lands - Forest management activities conducted on state and private forest ownerships, meeting the statutory definition of *timberland*, involving the barter or sale of biomass byproducts, is subject to regulation under the provisions of the Z-berg-Nejedly Forest Practice Act (Division 4, Chapter 8, Public Resources Code) and associated regulations under Title 14, California Code of Regulations, Chapter 4. The Public Resources Code and its associated regulations apply to activities that include a wide range of prescriptive standards designed to protect water quality, wildlife habitat, fisheries habitat, soils productivity, archaeological resources, aesthetics, and forest productivity. Landowners with more than 50,000 acres of forestland are required by regulation to demonstrate how their planned management activities will meet long-term sustained yield objectives.

Private forest land owners with less than 2,500 acres of timberland are eligible to submit a Non-industrial Timber Management Plan which outlines the long term management strategy for the property. Once approved through a multi-agency review, the landowner can conduct timber operations under a Notice of Timber Operations. Non-industrial Timber Management Plans have a core component that requires an assessment of long-term sustained yield based on an uneven-age silvicultural prescription. The practice of uneven aged management requires demonstration of natural regeneration and the maintenance of a balanced forest stand structure. State and private landowners may also conduct timber harvesting operations designed to address fuel management, including biomass harvesting, under a variety of exemptions and emergency notice provisions.

It is also anticipated that forest management activities that will generate biomass from private or state forest landownerships that do not meet the definition of timberland, under the Z'berg-Nejedley Forest Practice Act, will be eligible. These lands would typically not support a stand of commercial tree species, but may still support other non-commercial tree species or other woody vegetation. While these projects are not subject to regulation under the Forest Practice Act, they would generally fall under the provisions of the California Environmental Quality Act (CEQA). Therefore, the types of forest management activities that generate biomass feedstocks from most forest fuel hazard reduction activities will fall within the definition of sustainable forest management given their alignment with subpart (f) of the attached definition of sustainable forestry endorsed by the Society of American Foresters (Appendix A), as well as by meeting the intent of SB 1122. As such, these feedstocks will be classified as eligible.

Existing Regulatory Framework for Federal Lands - Federal policy for sustainability activities on National Forest Lands is described in the National Forest Management Act of 1976 (P.L.94-588). National Forests are required to prepare Forest and Resource Land Management Plans to guide how forests are managed and to guide design of project level activities consistent with 36 CFR 219. The first priority under 36 CFR 219.2 is to maintain or restore ecological sustainability of national forests to provide for a wide variety of uses, values, products and services and to conform to all applicable environmental laws and regulations. Additional federal policy on sustainability is outlined in the *National Report on Sustainable Forests—2010* (FS 979). Current guidance regarding management activities on federal lands in the

National Forest System in California emphasize application of restoration principles identified in General Technical Report (GTR)-220 (North, et.al., 2009) with management guidance provided in GTR-237, titled *Managing Sierra Nevada Forests* (North, 2012).

Biomass Utilization and Sustainable Forest Management

A number of authors have recognized the clear benefits of reducing density of vegetation, particularly on dry forest types to achieve numerous goals including reducing impacts associated with fire, improving forest health, improving resilience of forests in light of anticipated climate change, and maintaining sustainable carbon stocks and sequestration capacity of forested landscapes (Naeem, et. al. 1999, Aber, et. al., 2000, Franklin and Johnson, 2013, Forest Guild 2013, Franklin and Johnson, 2012). In addition, reducing density of vegetation while maintaining important forest structure elements like snags, down woody debris and native oaks often increase forest structural diversity and enhance wildlife habitats (Spies and Franklin, 1991, Hayes et al., 1997), and increase overall wildlife and native plant biodiversity at both the project and landscape scale (Hayes et al., 2003, Rupp et al. 2012, Verschuyt et al. 2011, Zwolak, 2009).

Markets for biomass feedstocks generated from forested landscapes in California have generally been confined to those areas in close proximity to existing biomass facilities. It is anticipated that build out of 50 new Mw of capacity under the provisions of Public Utilities Section 399.20 will expand existing markets for biomass feedstocks.

Sustainable Forest Management Definition Recommendations for Purposes of Determining Byproduct Eligibility

While the Department recognizes that timber operations on private timberlands must address sustained yield, sustainable forest management practices within the context of PUC Section 399.20 encompasses a broader set of criteria and includes acreage in federal ownership. Given the emphasis of SB 1122 on fire threat treatment linked to sustainable forest management activities and the input from workshop participants, the Department recommends that CPUC staff focus on utilization of the definition developed by the Society of American Foresters as a basis for determining sustainable forest management. Further, the Department recommends that eligible project types for the purposes of determining byproduct eligibility focus on 1) projects that incorporates the specific element in the SAF definition associated with maintenance of long term socioeconomic benefits associated with public safety, jobs, air quality, and economic benefits fuel treatment will provide if markets are found for by-products of fuel treatments, [Paraphrase of SAF definition subpart 2(f)] as well as, 2) projects that maintains biodiversity, productivity, regeneration capacity, vitality and potential to fulfill relevant ecological, economic, and social functions[Paraphrase of SAF definition subpart 2].

Specifically, the Department recommends that CPUC staff consider the following definition of **sustainable forest management** for purposes of determining eligibility of by-products—

Qualifying byproducts from sustainable forest management include materials derived from projects that are conducted to reduce fuels which pose a threat to public and the environment in an around communities as well as projects which can be demonstrated to contribute to restoration of forests, enhance the resilience of forests through reduction in fire threat, contribute to restoration of unique forest habitats or maintains or restores forest biodiversity, productivity and regeneration capacity.

Issue 2-Verification, Certification, and Monitoring of Feedstock Eligibility

Consistent with the above definition, to meet the sustainable forest management eligibility fuel sourcing criteria the owner or operator must ensure that biomass feedstock from any project is sourced from one or more of the following project types and that, where appropriate, a third-party verification process addresses the key elements and gaps related to sustainable forest management risk associated with biomass operations identified by Stewart and others. The key elements to be evaluated are listed in appendix C-2:

Eligible Byproduct Sources:

- I. **Fire Threat Reduction** - biomass feedstock which originates from fuel reduction activities identified in a fire plan approved by CAL FIRE or other appropriate state, local or federal agency. On federal lands this includes fuel reduction activities approved under 36 CFR 220.6(e)(6)ii and (12) thru (14).
- II. **Fire Safe Clearance Activities** - biomass feedstock originating from fuel reduction activities conducted to comply with PRC Sections 4290 and 4291. This would include biomass feedstocks from timber operations conducted in conformance with 14 CCR 1038(c) (150' Fuel Reduction Exemption) as well as projects that fall under 14 CCR 1052.4 (Emergency for Fuel Hazard Reduction), 14 CCR 1051.3-1051.7 (Modified THP for Fuel Hazard Reduction), and 14 CCR 1038(i) (Forest Fire Prevention Exemption), and categorical exclusions on federal lands approved under 36 CFR 220.6(e)(6)ii and (12)-(14).
- III. **Infrastructure Clearance Projects** - biomass feedstock derived from fuel reduction activities undertaken by or on behalf of a utility or local, state or federal agency for the purposes of protecting infrastructure including but not limited to: power lines, poles, towers, substations, switch yards, material storage areas, construction camps, roads, railways, etc. This includes timber operations conducted pursuant to 14 CCR 1104.1(b),(c),(d),(e),(f) &(g).
- IV. **Other Sustainable Forest Management** – biomass feedstock derived from sustainable forest management activities that accomplish one or more of the following: 1) forest management applications that maintain biodiversity, productivity, and regeneration capacity of forests in support of ecological, economic and social needs, 2) contributes to forest restoration and ecosystem sustainability, 3) reduces fire threat through removal of surface and ladder fuels to reduce the likelihood of active crown fire and/or surface fire intensity that would result in excessive levels of mortality and loss of forest cover or, 4) contributes to restoration of unique habitats within forested landscapes.

It is recommended by the Department that by-products which do not meet the criteria listed above would not be eligible by-products of sustainable forest management. Based on input from the workshop participants, it was recognized that some flexibility be provided to producers relative to mix of fuel sources and that some provision be provided to allow a producer to utilize material sourced from projects that would not meet the eligibility criteria listed above. To accommodate this need for some supply flexibility the Department recommends that CPUC staff consider allowances for up to 20% of the by-products be sourced from "other" sources as described below.

Other Eligible Supply Sources: Eligible byproducts from this category include the following:

- i. *biomass feedstocks derived from other forest management activities that fail to meet 12 out of 15 of the eligibility criteria in the checklist found in Appendix C-1 and C-2.*
- ii. *biomass feedstocks that will be used at the facilities from "other" waste streams identified in SB 1122*

Establishing the Basis for and Use of Eligibility Criteria

It is recommended that by-products from projects which fall into the Fuel Reduction, Fire Safe Clearance, and Infrastructure Categories as defined above (i, ii and iii) be presumed to be eligible and would not be required to fill out the eligibility criteria form in Appendix C-1 and C-2. These projects will, however, need to submit a certification form (Appendix D) and be compliant with other applicable federal, state and local laws.

With some exceptions, as noted below, forest management activities not associated with the above referenced categories are required to fill out the eligibility form in Appendix C-1 and C-2 to determine if the biomass to be generated by the project is eligible and meets the criteria of Sustainable Forest Management Practices for the purposes of SB 1122.

Evaluations, completed by a Registered Professional Forester or appropriate federal officer, with exceptions noted herein, must be done on a project-by-project basis upon an assessment of the applicable management practices.

Evaluation of biomass supply eligibility from by-products of sustainable forest management for federal projects - Federal projects which generate biomass on National Forest System Lands or other federally owned or managed lands which incorporate management principles identified in GTR-220 and GTR-237 will generally be eligible as being sourced from Sustainable Forest Management. To document the consistency of a specific project with the restoration principles in the GTR guidance document, the appropriate Forest Officer or agency official will utilize the eligibility form to determine whether biomass feedstock meets sustainability criteria and can be certified as a by-product of sustainable forest management consistent with Section 399.20. The Forest Biomass Sustainability Byproduct Eligibility Form is used to help evaluate the project to determine and document if byproducts from a forest management project are eligible as a sustainable forest management source.

Evaluation of biomass supply eligibility from by-products of sustainable forest management from projects subject to regulation under the Z'Berq-Nejedley Forest Practice Act - For timber harvesting conducted on state and private timberlands, removal of biomass material for sale constitutes a commercial activity and is subject to regulation under the Forest Practice Act. Current forest practice rules generally do not have prescriptive regulatory requirements specifically addressing biomass harvesting because the low volume harvesting of small woody material (tree tops, branches, slash from logging operations, and small sapling/pole sized conifers and hardwoods) has not been viewed as an activity likely to result in significant adverse or cumulative impacts. CAL FIRE would expect that biomass harvesting, incidental to the more common types of commercial timber operations, not to rise to the level of potential significant adverse impacts, and therefore the requirements of CEQA (disclosure, evaluation and mitigation) would not be triggered. However, in cases where a fair argument for

significant adverse impacts is raised, CAL FIRE would expect the registered professional forester preparing the timber harvesting plan (THP) to address those impacts in sufficient detail to mitigate the impacts.

Since the Board of Forestry and Fire Protection's forest practice rules are not tied to the proposed definition of 'sustainable forest management' as described in Appendix A of this document, it is recommended that CPUC should recognize the need for a separate governance process for biomass harvesting operations that would be subject to Section 399.20 of the Public Utilities Code. CAL FIRE does not view the two processes in conflict (enforcement of the Forest Practice Act by the department and enforcement of Section 399.20 by PUC). THPs are intended to address significant adverse impacts, and not necessarily intended to address the broader definition of sustainable forest management as described in this whitepaper. While the Forest Practice Regulations (FPRs) governing THPs generally address "the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality, and potential to fulfill, now and in the future, relevant ecological, economic, and social functions at local, national, and global levels", the FPRs were not intended for the type of specificity required in determining byproduct eligibility under SB 1122. The FPRs do not explicitly mention stewarding lands to fulfill economic and social functions at a local or national level. Nonetheless, the department and many participants in the aforementioned workshops deemed this to be an important consideration.

A checklist approach for certification has been provided in Appendix C-2; however, this should be viewed as a recommendation, where the specific content could be modified or edited by PUC as improvements, clarifications, or new issues are identified.

For each of the elements to be addressed in Appendix C-2 it is recommended that the seller of biomass describe the planned operations and potential positive and/or negative impacts to each resource issue to be addressed in Appendix C. Review of concepts from GTR 220, GTR 237, CEC-500-2011-036, (Stewart, et.al), and GTR 292 (Jain et. al., 2012) are recommended as important references to assist in assessing and addressing the sustainability of proposed operations where biomass removals are proposed to achieve forest management, forest restoration, and/or fire threat reduction objectives.

Utilization of this approach will facilitate environmental review by third party verifiers, as well as completion of Appendix C-2 (Forest Biomass Sustainability Byproduct Eligibility Form) for determination of whether the biomass generated by the project meets eligible byproducts under PUC Section 399.20.

For ownerships with approved Sustained-Yield Plans or Programmatic Timber Environmental Impact Reports, harvest documents may rely on the assessment of sustainability contained in the programmatic documents to the extent that those elements are addressed and summarize the operational elements applicable to any project under the appropriate area in Appendix C-2.

Exceptions to the requirement to apply Appendix C-1 and C-2 for Biomass Produced During Restoration Projects and Small Projects: The following project types are assumed to meet the sustainable forest management criteria or small project size and are recommended to be exempted from completing the Forest Biomass Sustainability Byproduct Eligibility Form (Appendix C-2).

- 1) Sustainable forest management projects implemented on state, federal, and private ownership which involve meadow restoration, restoration of wetlands, restoration of aspen and other similar activities which are undertaken for restoration purposes and are subject to environmental review under CEQA or NEPA.

- 2) Operations conducted pursuant to an approved Non-Industrial Timber Management Plan where the plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant adverse impacts, evaluates potential significant impacts, and mitigates potential significant impacts.
- 3) Operations conducted pursuant to an approved Timber Harvesting Plan or Modified Timber Harvesting Plans on non-industrial timberland ownerships where the landowner is not primarily engaged in the manufacture of wood products and where the approved plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant adverse impacts, evaluates potential significant impacts, and mitigates potential significant impacts.
- 4) Operations with a total estimated volume of 250 bone dry tons or less.

These projects will need to submit a certification form (Appendix D) and be compliant with other applicable federal, state and local laws.

Certification, Verification and Monitoring to Determine Biomass/Byproduct Eligibility Requirements

Certification: For projects on private timberlands, completion of the "Forest Biomass Sustainability Byproduct Form (Appendix C-2)" by a Registered Professional Forester as defined in Title 14 of the California Code of Regulations, Chapter 10 is recommended. Representations of the Registered Professional Forester in completion of the form and certification will be subject to the disciplinary guidelines as described in Public Resources Code Sections 774-779 and the provisions of the California Code of Regulations, Chapter 10, Sections 1612-1614.

For federal projects certification will be completed by the appropriate federal officer with authority to approve project decisions pursuant to Forest Service Manual 2400 and all subtitles. Representatives with responsibility for accuracy of the certification are subject to personnel procedures outlined in Code of Federal Regulations Title 5, Subpart 430, Performance Management.

Certification by the Registered Professional Forester or appropriate federal representative should be completed utilizing the certification form included in Appendix D. It is expected that each project will have an identifier, map, certification relative to fuel source and an estimated volume by fuel source category or categories.

Verification: The owner/operator of the bioenergy facility will be responsible for verifying that the fuel has been appropriately certified. Trip tickets and loads origin will demonstrate a chain-of-custody to the project source. Information shall be available at the bioenergy facility for audit.

Monitoring for Compliance with Eligibility Criteria: It is recommended that a random audit procedure be established to ensure compliance with program requirements. The consequences for failure to comply should be discussed and developed collaboratively between the CPUC, appropriate federal agencies and CAL FIRE.

Recommended Audit Period and Remediation: It is also recommended that for purposes of verifying that an individual biomass facility is securing supplies from eligible biomass feedstock sources in a proportion consistent with the targets, the compliance with biomass feedstock supply mix criteria shall be determined based on a 5-year rolling average. It is also recommended that CPUC staff develop a process or processes that bring the biomass feedstock supply mix into conformance with the eligibility

339 requirements, if it is determined that a given facility is out of compliance. A process for facilities to alter
340 the eligible biomass feedstock mix should also be developed.
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APPENDIX A

Society of American Foresters: The Dictionary of Forestry

(sustainable forestry) (SFM) *this evolving concept has several definitions* 1. the practice of meeting the forest resource needs and values of the present without compromising the similar capability of future generations —*note* sustainable forest management involves practicing a land stewardship ethic that integrates the reforestation, managing, growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat, and aesthetics (UN Conference on Environment and Development, Rio De Janeiro, 1992) 2. the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality, and potential to fulfill, now and in the future, relevant ecological, economic, and social functions at local, national, and global levels, and that does not cause damage to other ecosystems (the Ministerial Conference on the Protection of Forests in Europe, Helsinki, 1993) — *note* criteria for sustainable forestry include (a) conservation of biological diversity, (b) maintenance of productive capacity of forest ecosystems, (c) maintenance of forest ecosystem health and vitality, (d) conservation and maintenance of soil and water resources, (e) maintenance of forest contributions to global carbon cycles, (f) maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs of societies, and (g) a legal, institutional, and economic framework for forest conservation and sustainable management (Montréal Process, 1993) —*see* biological legacy, certify, chain of custody, criteria and indicators, criterion, ecosystem management.

This definition last updated 10/23/2008.

APPENDIX B

United States Department of Agriculture: Forest Service: *"National Report on Sustainable Forests", June 2011 (FS-979).*

Sustainable forest management definition:

The stewardship and use of forests and forest lands in such a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, and vitality, and forest's potential to fulfill, now and in the future, relevant ecological, economic, and social functions at local, national, and global levels, and not cause damage to other ecosystems.

The criteria and indicators are intended to provide a common understanding of what is meant by sustainable forest management. They provide a framework for describing, assessing, and evaluating a country's progress toward sustainability at the national level and include measures of:

1. Conservation of biological diversity.
2. Maintenance of productive capacity.
3. Maintenance of forest ecosystem health.
4. Conservation and maintenance of soil and water resources.
5. Maintenance of forest contribution to global carbon cycles.
6. Maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs of society.
7. Legal, institutional, and economic frameworks for forest conservation.

APPENDIX C - 1

SB1122 Forest Biomass
Forest Biomass Sustainability Byproduct Eligibility Form:
Instructions and Worksheet

Instructions

Projects which fall into the Fuel Reduction, Fire Safe Clearance, and Infrastructure categories as defined under sustainable forest management are presumed to be eligible and are not required to fill out Appendix C-2. Projects which meet the sustainable forest management criteria, but are exempt from submitting Appendix C-2 must still meet the minimum sustainability criteria outlined in Appendix C-2. Projects conducted under "i", "ii", "iii" or "iv" (including exempt projects) must submit a certification form (Appendix D).

With the exception of projects types noted below, forest management activities not associated with forest biomass categories "i", "ii", and "iii", referenced below, will require use of the Forest Biomass Sustainability Byproduct Eligibility Form (Appendix C-2) to determine if the biomass generated by the project is eligible, and meets the criteria of Sustainable Forest Management Practices under PUC 399.20.

Ranking criteria have been developed to reflect and support the broad criteria described within the above referenced definition of Sustainable Forest Management. Evaluations, completed by a Registered Professional Forester or appropriate federal officer with exceptions noted herein, must be on a project-by-project basis upon an assessment of the applicable management practices.

Eligible Forest Biomass Categories

*i. **Fire Threat Reduction** - biomass feedstock which originates from fuel reduction activities identified in a fire plan approved by CAL FIRE or other appropriate, state, local or federal agency. On federal lands this includes fuel reduction activities approved under 36 CFR 220.6(e)(6)ii and (12) thru (14).*

*ii. **Fire Safe Clearance Activities** - biomass feedstock originating from fuel reduction activities conducted to comply with PRC Sections 4290 and 4291. This would include biomass feedstocks from timber operations conducted in conformance with 14 CCR 1038(c) 150' Fuel Reduction Exemption, as well as projects that fall under 14 CCR 1052.4 (Emergency for Fuel Hazard Reduction), 14 CCR 1051.3-1051.7 (Modified THP for Fuel Hazard Reduction), and 14 CCR 1038(i) Forest fire Prevention Exemption, Categorical exclusions on federal lands approved under 36 CFR 220.6.(e).(6)ii.,*

*iii. **Infrastructure Clearance Projects** - biomass feedstock derived from fuel reduction activities undertaken by or on behalf of a utility or local, state or federal agency for the purposes of protecting infrastructure including but not limited to: power lines, poles, towers, substations, switch yards, material storage areas, construction camps, roads, railways, etc. This includes timber operations conducted pursuant to 14 CC1104. 1(b),(c),(d),(e),(f) &(g).*

*iv. **Other Sustainable Forest Management** – biomass feedstock derived from sustainable forest management activities that accomplish one or more of the following: 1) forest management applications that maintain biodiversity, productivity, and regeneration capacity of forests in support of ecological, economic and social needs, 2) contributes to forest restoration and ecosystem sustainability,*

3) reduces fire threat through removal of surface and ladder fuels to reduce the likelihood of active crown fire and/or surface fire intensity that would result in excessive levels of mortality and loss of forest cover or, 4) contributes to restoration of unique habitats within forested landscapes.

The following project types meet the sustainable forest management criteria and are exempted from submitting the Forest Biomass Sustainability Form (Appendix C-2)

- 1) Sustainable Forest Management projects implemented on state, federal, and private ownership which involve meadow restoration, restoration of wetlands, restoration of aspen and other similar activities which are undertaken for restoration purposes and are subject to environmental review under CEQA or NEPA.
- 2) Operations conducted pursuant to an approved Non-Industrial Timber Management Plan where the plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant adverse impacts, evaluates potential significant impacts, and mitigates potential significant impacts.
- 3) Operations conducted pursuant to an approved Timber Harvesting Plan or Modified Timber Harvesting Plans on non-industrial timberland ownerships where the landowner is not primarily engaged in the manufacture of wood products and where the approved plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant impacts, evaluates potential significant impacts, and mitigates potential significant impacts.
- 4) Operations with a total estimated volume of less than 250 bone dry tons.

Section I

Ownership Category: identify if the parcel on which the project is conducted is owned by a private entity, the state or the Federal Government

Number of Acres: Identify how many acres are being treated / harvested by the project

Type of Harvest Document (if applicable): Identify the type of harvest document, State Permit, Federal Permit or exemption that apply to this project

Harvest Document Designator: Identify the State or Federal entity that issued the harvest permit, exemption or other document that applies to this project

Facility Identifier: Provide the identifier for the SB1122 (or other) forest biomass facility which will receive and utilize the forest waste (biomass) to generate energy.

Section II

To qualify under forest biomass category "iv", treatment activities must provide co-benefits for at least 12 of the 16 items identified in Appendix C-2, Section II, Items A – E. In addition, at least one item must come from each of Section II A – D. A Registered Professional Forester should determine if planned activities meet the sustainability criteria under section "iv".

APPENDIX C - 2

Forest Biomass Sustainability Byproduct Eligibility Form

SECTION IOwnership Category: ☐ Private ☐ State ☐ Federal Number of Acres: _____

Type of Harvest/NEPA Document: _____ Harvest/NEPA Document Designator: _____

Facility Identifier: _____

SECTION II

Note: Please keep responses brief (under 250 words) and focused on the basis for the determination that the project will support sustainability of the specific objective. In lieu of providing a written response or in addition to the written response, where appropriate provide source references to the approved harvest/NEPA document where discussion of potential significant adverse impacts, evaluation and mitigation measures are provided.

A. Habitat, Temporal and Spatial Diversity Objectives (Pick all that apply)

- ☐ Openings for shade intolerant species were created to promote regeneration and habitat diversity.

Please describe percent and distribution of areas in small openings less than 2.5 acres in size and planned regeneration methods:

- ☐ Multi-age, multi-species tree habitats were created at the project level.
Please describe how the project immediately post harvest will support maintenance, enhancement and/or restoration of canopy cover and maintain or increase the QMD of an overstory of multi-age, multi-species tree habitats.

- ☐ Understory vegetation was retained and distributed across the project site consistent with fire threat reduction and habitat objectives and contributes to spatial heterogeneity by varying treatments to retain untreated patches, openings and widely spaced single trees and clumps.
Please describe objectives for retention of understory shrubs and trees and estimate post-harvest areas of untreated patches and openings.

563 B. Habitat Elements: (Pick all that apply)

- ☐ Snags are retained consistent with safety, FPRs, and fire threat reduction goals.
Please describe post harvest snag retention objectives and estimate the percentage of existing snags to be removed as part of the planned forest management activities.

- ☐ Down logs with benefit to habitat diversity are retained consistent with fire threat reduction goals.
Please describe project treatment objectives for retention of existing or project related down woody material.

- ☐ Large hardwoods and Legacy trees are retained as post treatment stand components and habitat.
Please describe post harvest retention objectives for hardwoods and legacy trees.

- ☐ Management practices and harvesting associated with the project impacts are consistent with objectives of retaining or recruiting large trees at the project and landscape level.
Please describe post harvest old growth tree retention objectives:

564 C. Forest Health and Fire Management Objectives: (Pick all that apply)

- ☐ Fire threat is reduced through treatment of ladder fuels and surface fuels to achieve reduction in incidence of crown torching in overstory trees and to avoid active crown fires under most conditions.
Please describe post harvest spatial arrangement objectives for retention of understory shrubs and trees in relation to overstory trees.

- ☐ Outcomes support reintroduction of prescribed fire.
Please describe, if applicable post harvest surface and ladder fuel conditions and proposed use of prescribed fire.

- ☐ Improvement of overall forest health through reduction in overstocking in small tree sizes and reduction of competition for soil moisture with overstory trees. Please describe:

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D. Air and Water Quality Protection: (Pick all that apply)

- ☐ Avoided emissions by eliminating need for open burning of slash piles and/or decomposition. Please describe the relative reduction in emissions attributable to removal of material from the project site for use as fuel for energy generation in comparison to piling and burning or piling and decomposition.):

- ☐ Measures have been incorporated to address moist microsites, and near stream habitats. Please describe what measures will be employed to protect moist microsites and near-stream habitats.

- ☐ Soil protection measures used to minimize compaction and loss of A-horizons and soil carbon. Please describe.

- ☐ Operational plans provide for the retention of fine woody debris to minimize potential threats to soil productivity and meet fire threat reduction objectives. Please describe.

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E. Societal and Economic Benefits: (Pick all that apply)

- ☐ Project contributes to societal benefits of local communities by way of fire safety, improved environmental health and overall quality of life. Please describe.

- ☐ Project contributes to local economies by way of providing additional local employment opportunities and investment.

Please describe .

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APPENDIX D

SB1122 Forest Biomass
Project Eligibility Certification

Ownership Category: ☐ Private ☐ State ☐ Federal Number of Acres: _____
 Type of Harvest/NEPA Document: _____ Harvest/NEPA Document Designator: _____
 Facility Identifier: _____ RPF License Number (if Applicable): _____

Eligible Fuel Source: (Pick one)

To meet the eligible fuel sourcing criteria the owner or operator must ensure that biomass feedstock from any project is sourced from one or more of the following project types:

- ☐ **Fire Threat Reduction** - biomass feedstock which originates from fuel reduction activities identified in a fire plan approved by CAL FIRE or other appropriate, state, local or federal agency, Categorical exclusions on federal lands approved under 36 CFR 220.6.(e).(6)ii.
- ☐ **Fire Safe Clearance Activities**- biomass feedstock originating from fuel reduction activities conducted to comply with PRC Sections 4290 and 4291. This would include biomass feedstocks from timber operations conducted in conformance with 14 CCR 1038(c) 150' Fuel Reduction Exemption, or Categorical exclusions on federal lands approved under 36 CFR 220.6(e)(6)ii and (12) thru (14).
- ☐ **Infrastructure clearance projects**- biomass feedstock derived from fuel reduction activities undertaken by or on behalf of a utility or local, state or federal agency for the purposes of protecting infrastructure including but not limited to: power lines, poles, towers, substations, switch yards, material storage areas, construction camps, roads, railways, etc. This includes timber operations conducted pursuant to 14 CCR 1104.1(b),(c),(d),(e),(f) &(g).
- ☐ **Other Sustainable Forest Management*** – biomass feedstock derived from sustainable forest management activities that accomplish one or more of the following: 1) forest management applications that maintain biodiversity, productivity, and regeneration capacity of forests in support of ecological, economic and social needs, 2) contributes to forest restoration and ecosystem sustainability, 3) reduces fire threat through removal of surface and ladder fuels to reduce the likelihood of active crown fire and/or surface fire intensity that would result in excessive levels of mortality and loss of forest cover or, 4) contributes to restoration of unique habitats within forested landscapes.

Other Fuel Sources:

Eligible fuel from this category includes the following:

- ☐ biomass feedstocks derived from other forest management activities that fail to meet the requirements of the checklist found in Appendix "C".
- ☐ biomass feedstocks that will be used at the facilities from "other" waste streams covered by SB 1122

I hereby certify that the information contained in this certification is complete and accurate to the best of my knowledge and conforms to State and Federal Laws,

Print Name: _____ Signature: _____

As appropriate attach Forest Biomass Sustainability Byproduct Eligibility Form.

*** The following project types are assumed to meet the sustainable forest management criteria and are exempted from completing the Forest Biomass Sustainability Form (Appendix C-2)**

- 1) Sustainable Forest Management projects implemented on state, federal, and private ownership which involve meadow restoration, restoration of wetlands, restoration of aspen and other similar activities which are undertaken for restoration purposes and are subject to environmental review under CEQA or NEPA.
- 2) Operations conducted pursuant to an approved Non-Industrial Timber Management Plan where the plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant adverse impacts, evaluates potential significant impacts, and mitigates potential significant impacts.
- 3) Operations conducted pursuant to an approved Timber Harvesting Plan or Modified Timber Harvesting Plans on non-industrial timberland ownerships where the landowner is not primarily engaged in the manufacture of wood products and where the approved plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant adverse impacts, evaluates potential significant impacts, and mitigates potential significant impacts.
- 4) Operations with a total estimated volume of less than 250 bone dry tons.